



**Cherokee Falls Hydroelectric Project, LLC**  
A Subsidiary of Enel Green Power North America, Inc.

100 Brickstone Square, Suite 300, Andover, MA 01810  
T +1-978-681-1900 – F +1-978-681-7727

March 18, 2019

Re: Cherokee Falls Hydroelectric Project (FERC No. 6880); Draft License Application

Dear Stakeholder:

Pursuant to 18 CFR 16.8(c)(4), Cherokee Falls Hydroelectric Project, LLC (Cherokee) is distributing to resource agencies and Indian tribes a Draft Application for a Major Water Power Project 5 Megawatts or Less for its Cherokee Falls Hydroelectric Project (FERC Project No. 2880), to initiate the second stage of the Traditional Licensing Process consultation requirements. Cherokee is hereby requesting from the resource agencies and Indian tribes to review and provide written comments on the Draft License Application.

Cherokee is providing for review and comment the Draft License Application as follows:

- Volume I: Draft License Application (Public)
  - Initial Statement
  - Verification Statement
  - Exhibit A – Project Description
  - Exhibit E – Environmental Report
  - Attachment 1: Study Reports
    - Study 1 – Baseline Water Quality Monitoring Study
    - Study 2 – Aquatic Benthic Macroinvertebrate Study
    - Study 3 – Freshwater Mussel Survey
    - Study 4 – Desktop Fish Entrainment and Turbine Mortality Study
    - Study 5 – Wetted Habitat and Low Flow Analysis Study

18 CFR 16.8(c)(5) allows written comments on the material presented in the Draft License Application be provide to Cherokee within 90 days from the date of this letter transmitting and requesting comments on the Draft License Application. Therefore, Cherokee respectfully requests comments on the Draft License Application by Monday, June 17, 2019. Comments on the Draft License Application may be sent to [Kevin.Webb@enel.com](mailto:Kevin.Webb@enel.com) with a copy to [jsplenda@louisberger.com](mailto:jsplenda@louisberger.com).

If there are any questions concerning the enclosed please do not hesitate to contact Mr. Kevin Webb, Hydro Licensing Manager, at (978) 935-6039 or [Kevin.Webb@enel.com](mailto:Kevin.Webb@enel.com).

Respectfully,

**Cherokee Falls Hydroelectric Project, LLC**

Conrad E. St. Pierre  
Senior Director, Hydro Operations & Maintenance

cc: K. Webb, Cherokee  
B. Harris, Cherokee  
E. Anderson, Cherokee  
J. Splenda, Louis Berger  
Stakeholder Distribution List

**RECEIVED**

APR 01 2019

PSC SC  
MAIL / DMS

### Stakeholder Distribution List

FEDERAL	
<p>Bruce Maytubby Regional Director Bureau of Indian Affairs 545 Marriott Drive, Suite 700 Nashville, TN 37214-2751</p>	<p>Harold Peterson U.S. Bureau of Indian Affairs 545 Marriott Drive, Suite 700 Nashville, TN 37214-2751</p>
<p>US Bureau of Indian Affairs Division of Water and Power 1849 C St NW MS 4655 MIB Washington, DC 20240</p>	<p>Office of the Field Solicitor US Department of the Interior Knoxville Field Office 530 S. Gay St, Suite 800 Knoxville, TN 37929</p>
<p>Diana Woods USEPA Region 4 61 Forsyth St SW 9T25 Atlanta, GA 30303-8960</p>	<p>James Giattina Water Protection Division USEPA Region 4 Sam Nunn Atlanta Federal Center (SNAFC) 61 Forsyth Street SW Atlanta, GA 30303-8960</p>
<p>Leopoldo Miranda Assistant Regional Director US Fish and Wildlife Service Ecological Services 1875 Century Boulevard Atlanta, GA 30345</p>	<p>Melanie Olds FERC Coordinator U.S. Fish and Wildlife Service South Carolina Ecological Services Field Office 176 Croghan Spur Road, Suite 200 Charleston, SC 29407</p>
<p>The Honorable Jeff Duncan United States House of Representatives 106 Cannon HOB Washington, DC 20515</p>	<p>Mr. Pace Wilber National Marine Fisheries Service Charleston Area Office 219 Fort Johnson Rd Charleston, SC 29412-9110</p>
<p>Jeffrey R Duncan Southeastern Rivers Program Manager National Park Service 175 Hamm Rd, Suite C Chattanooga, TN 37405</p>	<p>Deirdre Hewitt Program Manager Rivers, Trails, and Conservation Assistance National Park Service 1924 Building 100 Alabama St, SW Atlanta, GA 30303</p>

The Honorable Tim Scott United States Senate 520 Hart Senate Office Building Washington, DC 20510	The Honorable Lindsey Graham United States Senate 290 Russell Senate Office Building Washington, DC 20510
Rob Holland Public Affairs Officer US Army Corps of Engineers South Atlantic Division 60 Forsyth St SW, Room 10M15 Atlanta, GA 30303-8801	Eric Strom, Director USGS South Carolina Water Science Center 720 Gracern Rd Stephenson Center, Suite 129 Columbia, SC 29210
<b>STATE</b>	
Office of the Governor 1205 Pendleton Street Columbia, SC 29201	Honorable Alan Wilson Office of the Attorney General PO Box 11549 Columbia, SC 29201
Bill Marshall Scenic Rivers South Carolina Department of Natural Resources 1000 Assembly Street PO Box 167 Columbia, SC 29202	Elizabeth Miller FERC Coordinator South Carolina Department of Natural Resources 1000 Assembly Street PO Box 167 Columbia, SC 29202
Alicia M. Rowe SC Dept. of Health & Environmental Control Water Quality Certification and Wetlands Section 2600 Bull St. Columbia, SC 29201	Chuck Hightower SC Dept. of Health & Environmental Control Water Quality Certification and Wetlands Section Water Quality Certification and Wetlands Section 2600 Bull St. Columbia, SC 29201
Alvin A. Taylor Director South Carolina Department of Natural Resources PO Box 167 Columbia, SC 2920	Duane Parrish Director South Carolina Department of Parks, Recreation and Tourism 1205 Pendleton St. Columbia, SC 29201-3731

Jocelyn Boyd Chief Clerk Public Service Commission of South Carolina 101 Executive Center Drive, Suite 100 Columbia, SC 29201	Jonathan Leader State Archaeologist SC Institute of Archaeology and Anthropology 1321 Pendleton St, 1st Floor, Suite 16 Columbia, SC 29208
Dr. Eric Emerson SHPO SC Department of Archives History 8301 Parklane Rd. Columbia, SC 29201-3731	Phil Gaines, Director State Park Service 1205 Pendleton St. Columbia, SC 29202
Stan Hutto Biologist State Park Service 1205 Pendleton St Columbia, SC 29202	
<b>LOCAL</b>	
City of Gaffney City Administrator 201 North Limestone Street P.O. Box 2109 Gaffney, SC 29340	City of Shelby City Manager 300 South Washington Street P.O. Box 207 Shelby, NC 28151
Town of Blacksburg Town Administrator 105 S. Shelby St. Blacksburg, SC 29702	Cherokee County County Administrator 110 Railroad Avenue Gaffney, SC 29340
<b>TRIBAL</b>	
Catawba Indian Nation 996 Avenue of the Nations Rock Hill, SC 29730	Dr. Wenonah G. Haire Tribal Historic Preservation Officer The Catawba Indian Nation 1536 Tom Steven Road Rock Hill, SC 29730

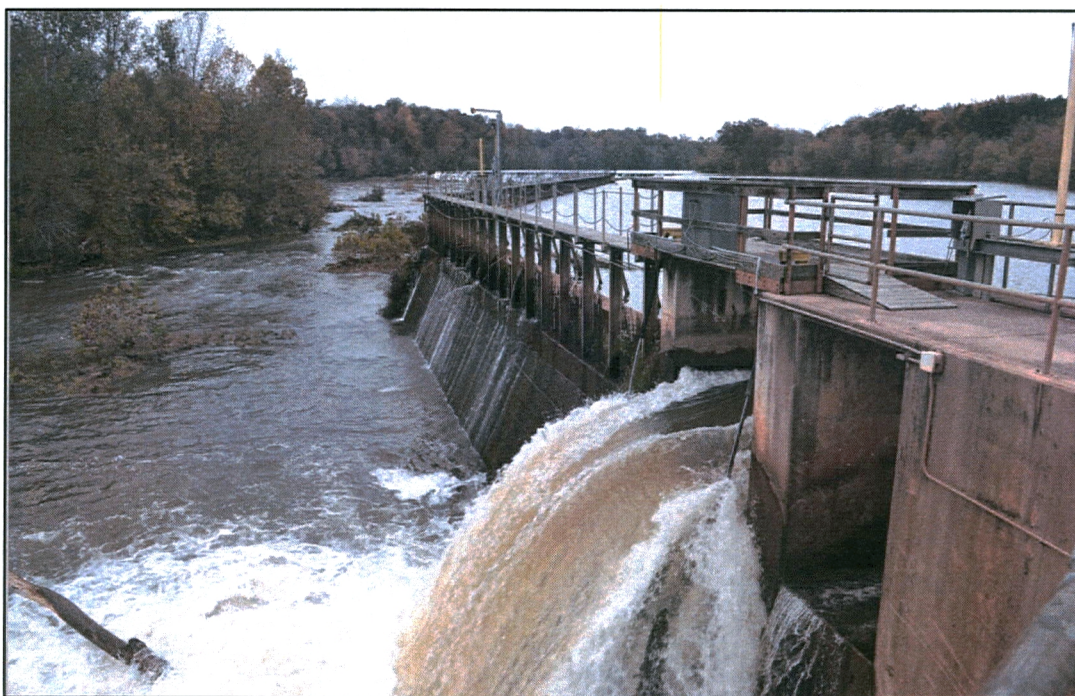
Cherokee Nation Cultural Resources Specialist PO Box 948 Tahlequah, OK 74465-0948	Russell Townsend Tribal Historic Preservation Officer Eastern Band of Cherokee Indians PO Box 455 Cherokee, NC 28719
Santee Sioux Tribal Council Chairman 108 Spirit Lake Ave West Niobrara, NE 68760	Tuscarora Nation Chief 5616 Walmore Road Lewiston, NY 14092
United Keetoowah Band of Cherokee Indians Chief PO Box 746 Tahlequah, OK 74465	Pamunkey Indian Tribe 1054 Pocahontas Trail King William, VA 23086
<b>NON-GOVERNMENTAL ORGANIZATIONS</b>	
Broad River Alliance 29 N. Market Street, Suite 610 Asheville, NC 28801	American Canoe Association Executive Director 1340 Central Blvd, Suite 210 Fredericksburg, VA 22401
American Rivers 1101 14th St. NW Suite 1400 Washington DC, 20005	Mark Singleton Executive Director American Whitewater PO Box 1540 Cullowhee, NC 28723

**Before the Federal Regulatory Energy Commission**

**DRAFT**

**Application for License for a Major Water Power Project**  
**5 Megawatts or Less**

**Cherokee Falls Hydroelectric Project**  
**(FERC No. 2880)**



**Cherokee Falls Hydroelectric Project, LLC**

**a subsidiary of**

**Enel Green Power North America, Inc.**



**Volume 1: Public**

**March 2019**



*Cherokee Falls Hydroelectric Project (No. 2880)*  
INITIAL STATEMENT

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**INITIAL STATEMENT PER 18 CFR § 4.61**

*Application for License for a Major Water Power Project 5 Megawatts or Less*

1. Cherokee Falls Hydroelectric Project, LLC (the Applicant), a wholly owned subsidiary of Enel Green Power North America, Inc. (Enel), applies to the Federal Energy Regulatory Commission (Commission or FERC) for a new license for the existing Cherokee Falls Hydroelectric Project (Project), FERC Project Number 2880, as described in the attached Exhibits hereafter. The current license for the Cherokee Falls Hydroelectric Project was issued on August 3, 1981, and expires on July 31, 2021.
2. The location of the Project is:
 

State or Territory: South Carolina  
County: Cherokee  
Township or nearby town: Gaffney  
Stream or other body of water: Broad River
3. The exact name, address, and telephone number of the Applicant are:
 

Cherokee Falls Hydroelectric, LLC  
100 Brickstone Square, Suite 300  
Andover, Massachusetts 01810  
Telephone: (978) 681-1900
4. The exact name, address, and telephone number of each person authorized to act as agent for the Applicant in this application are:
 

Mr. Kevin Webb  
Hydro Licensing Manager  
Enel Green Power North America, Inc.  
100 Brickstone Square, Suite 300  
Andover, Massachusetts 01810  
Telephone: (978) 935-6039

Ms. Beth E. Harris, P.E.  
Regional Operations Manager  
Enel Green Power North America, Inc.  
11 Anderson Street  
Piedmont, South Carolina 29673  
Telephone: (864) 846-0042 ext. 100
5. The Applicant is a domestic corporation and is not claiming preference under section 7(a) of the Federal Power Act, 16 USC 800.
6. (i) The statutory or regulatory requirements of the State of South Carolina which affect the Project as it exists with respect to bed and banks and the appropriate, diversion, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power and in any other business necessary to accomplish the purpose of the license under the Federal Power Act are:

*Cherokee Falls Hydroelectric Project (No. 2880)*  
**INITIAL STATEMENT**

- Applicant is subject to Water Quality Certification from the South Carolina Department of Health and Environmental Control 401 (a)(1) of the Clean Water Act.

(ii) The steps which the applicant has taken or plans to take to comply with the regulations cited above are:

- The Applicant will submit a request for Water Quality Certification from the South Carolina Department of Health and Environmental Control concurrent with the filing of the Final License Application.

7. Brief project description:

(i) The existing installed generating capacity of the project is 4,140 kW.

(ii) Check appropriate box

☒ existing dam

☐ unconstructed dam

☐ existing dam, major modified project (see §4.30(b)(14))

8. Lands of the United States affected (shown on Exhibit G)

	(Name)	(Acres)
(i) National Forest		0
(ii) Indian Reservation		0
(iii) Public Lands Under Jurisdiction of		0
(iv) Other		0
(v) Total U.S. Lands		0

(iv) Check appropriate box:

☒ Surveyed land

☐ Unsurveyed land

9. The Project is an existing, operating project. The Project dam was constructed and completed around the early 1800s, and the existing powerhouse and equipment was constructed in the 1980s. No new construction or major project modifications are proposed.



*Cherokee Falls Hydroelectric Project (No. 2880)*  
INITIAL STATEMENT

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**ADDITIONAL INFORMATION REQUIRED BY 18 CFR § 4.32**

- 1. Identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operation or maintain the project:**

Cherokee Falls Hydroelectric Project, LLC, a Delaware limited liability company and a subsidiary of Enel Green Power North America, Inc., currently owns and will continue to maintain all proprietary rights necessary to construct, operate, and maintain the Project.

- 2. Identify (providing names and mailing addresses):**

- (i) **Every county in which any part of the project and any Federal facilities that would be used by the project would be located;**

Cherokee County  
110 Railroad Avenue  
Gaffney, SC 29340

- (ii) **Every city, town, or similar political subdivision:**

- i. **In which any part of the Project, and any Federal facility that would be used by the project, would be located; or**

The Project is not located within any boundary of any city, town, or similar political subdivision.

- ii. **That has a population of 5,000 or more people and is located within 15 miles of the project dam.**

City of Gaffney  
201 North Limestone Street  
P.O. Box 2109  
Gaffney, SC 29340

City of Shelby  
300 South Washington Street  
P.O. Box 207  
Shelby, NC 28151

- (iii) **Every irrigation district, drainage district or similar special purpose political subdivision (A) in which any part of the project is located, and any Federal facility that is or is proposed to be used by the project is located, or (B) that owns, operates, maintains, or uses any project facility or any Federal facility that is or is proposed to be used by the project:**

There is no irrigation district, drainage district, or similar special purpose political subdivision in which any part of the Project is located or that owns, operates, maintains, or uses any Project facility. The Project uses no Federal facilities and occupies no Federal lands.

- (iv) **Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application.**

There is no other political subdivision in the general area of the Project that there is reason to believe would be likely to be interested in, or affected by, this notification.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
**INITIAL STATEMENT**

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**(v) All Indian tribes that may be affected by the Project.**

Catawba Indian Nation  
 Chairman  
 PO Box 188  
 Catawba, SC 29704

Catawba Indian Nation  
 Catawba Cultural Preservation Project  
 611 East Main Street  
 Rock Hill, SC 29730

Eastern Band of Cherokee Indians  
 Cultural Resources Department  
 PO Box 455  
 Cherokee, NC 28719-0455

Cherokee Nation  
 Cultural Resources Specialist  
 PO Box 948  
 Tahlequah, OK 74465-0948

United Keetoowah Band of Cherokee Indians  
 Chief  
 PO Box 746  
 Tahlequah, OK 74465

Santee Sioux Tribal Council  
 Chairman  
 108 Spirit Lake Avenue  
 West Niobrara, NE 68760

Tuscarora Nation  
 Chief  
 5616 Walmore Road  
 Lewiston, NY 14092

Pamunkey Indian Tribe  
 1054 Pocahontas Trail  
 King William, VA 23086

**3. Notification**

**(i) The Applicant has made a good faith effort to give notification by certified mail of the filing of the application to:**

**(A) Every property owner of record of any interest in the property within the bounds of the Project, or in the case of the Project without a specific boundary, each such owner of property which would underlie or be adjacent to any Project works, including any impoundments; and**

**(B) The entities identified in paragraph (2) above, as well as any other federal, state, municipal or other local government agencies that there is reason to believe would likely be interested in or affected by the application.**

**4. PURPA Benefits**

The Applicant is not seeking any PURPA benefits in association with the relicensing of the Project.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
**INITIAL STATEMENT**

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**VERIFICATION**

*[to be completed for the Final License Application]*

This Application for Subsequent License for the Cherokee Falls Hydroelectric, LLC, FERC No. 2880 is executed in the

COMMONWEALTH OF MASSACHUSETTS  
 COUNTY OF ESSEX

by: Stephen D. Pike  
 Senior Vice President, Operations and Maintenance  
 Cherokee Falls Hydroelectric, LLC  
 Subsidiary of Enel Green Power North America, Inc.  
 100 Brickstone Square, Suite 300  
 Andover, MA 01810

who, being duly sworn, deposes and says that the contents of this application are true to the best of his knowledge or belief. The undersigned has signed this Application this \_\_\_\_ day of July, 2019.

CHEROKEE FALLS HYDROELECTRIC, LLC

By \_\_\_\_\_  
 Stephen D. Pike  
 Vice President, Operations and Maintenance

Subscribed and sworn to before me, a Notary Public of the Commonwealth of Massachusetts, this \_\_\_\_ day of July, 2019.

\_\_\_\_\_  
 (Notary Public)

(My Commission Expires \_\_\_\_\_)/seal

*Cherokee Falls Hydroelectric Project (No. 2880)*  
ACRONYMS AND ABBREVIATIONS

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## ACRONYMS AND ABBREVIATIONS

7Q10	Seven day average low flow with a ten year recurrence
Applicant	Cherokee Falls Hydroelectric, LLC
BREC	Broad River Electric Cooperative, Inc.
CFR	Code of Federal Regulations
cfs	cubic feet per second
CPUE	Catch per unit effort
°C	degrees Celsius
Enel	Enel Green Power North America, Inc.
EPRI	Electric Power Research Institute
EPT	Ephemeroptera, Plecoptera, Trichoptera
°F	degrees Fahrenheit
FERC or Commission	Federal Energy Regulatory Commission
FPA	Federal Power Act
ft	foot or feet
FWS	U.S. Department of the Interior, Fish and Wildlife Service
Hr.	hour
IPaC	(FWS) Information for Planning and Consultation
kVA	kilovolt-ampere
kW	kilowatt
K <sub>w</sub>	Erosion factor
kWh	kilowatt-hour
m	meters
m <sup>2</sup>	square meters
m/s	meters per second
mgd	million gallons per day
mg/L	milligram(s) per liter
mL	milliliter
msl	mean sea level
NCBI	North Carolina Biotic Index
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
No.	number
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NTU	nephelometric turbidity unit
NWI	National Wetlands Inventory
%	percent
RTE	rare, threatened, or endangered
§	Section of a statute such as 18 C.F.R. § 5.6 (c)

*Cherokee Falls Hydroelectric Project (No. 2880)*  
ACRONYMS AND ABBREVIATIONS

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SCDHEC	South Carolina Department of Health and Environmental Control
SCDNR	South Carolina Department of Natural Resources
SCIAA	South Carolina Institute of Archaeology and Anthropology
TMDL	total maximum daily load
USC	United States Code
USGS	U.S. Geological Survey

**CHEROKEE FALLS HYDROELECTRIC PROJECT  
FERC PROJECT NUMBER 2880**

**DRAFT  
APPLICATION FOR LICENSE FOR A MAJOR WATER POWER PROJECT  
5 MEGAWATTS OR LESS**

**EXHIBIT A-PROJECT DESCRIPTION**

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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## **1 CHEROKEE FALLS PROJECT DESCRIPTION**

The 4,140 kilowatt (kW) Cherokee Falls Hydroelectric Project (Project) is located on the Broad River in Cherokee County, South Carolina, near the City of Gaffney, South Carolina (Figure 1-1). The Broad River is in the northwestern Piedmont Plateau of South Carolina near the North Carolina state line. The Broad River is approximately 170 miles long and flows into the Congaree River near Columbia, South Carolina.

### **1.1 Turbine**

The powerhouse contains one turbine unit with a hydraulic capacity of 3,100 cubic feet per second (cfs). The turbine is connected to the generator by a gear box, which increases the rotational speed from 109 RPM at the turbine to 900 RPM at the generator. Information for the turbine unit is below:

- Voest-Alpine horizontal bulb turbine
- Runner diameter: 157.48 inches
- Rated hydraulic capacity: 3,100 cfs
- Rated head: 18 feet
- Rated speed: 109 RPM
- Rated output: 4,350 kW

### **1.2 Generator**

The project powerhouse contains one generating unit with a total installed capacity of 4,140 kW. Information on the generator unit is provided below:

- Ideal Electric Co. 4,400 kW 3-phase generator
- 4,889 kVA
- Power factor 0.9
- 4,160 Volts
- 60 Hz
- 900 RPM

### **1.3 Existing and Proposed Project Operations**

#### *1.3.1 Existing Operations*

The Project is operated as a run-of-river facility through the use of automatic pond level control, with no storage or flood control capacity. The pond level control system is able to start and stop the unit. The impoundment water surface elevation normally is maintained near the flashboard crest elevation 535.5 feet msl. The Project maintains a continuous year-round minimum flow in the bypassed reach of 65 cfs, which is provided by 4 inch diameter pipes embedded into the spillway cap. The Project has a total installed generating capacity of 4,140 kW with a total hydraulic capacity of 3,100 cfs. The Project operates at a typical gross head of 18 feet, which includes 5 foot high wooden flashboards.

#### *1.3.2 Proposed Operations*

Cherokee proposes the following:

- Continue to operate the Project as a run-of-river facility using automatic pond level control of the turbine-generator unit;
- Continue to provide a year-round minimum flow of 65 cfs, or inflow, whichever is less to the bypassed reach;

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

- Develop in consultation with the agencies a Sediment Management Plan to protect water, fisheries and aquatic resources as well as enhance recreation access to the Project impoundment;
- Develop in consultation with the agencies a Recreation Facilities Management Plan to enhance and maintain recreation facilities at the Project.
- Improve the existing canoe portage at the right (westerly) abutment of the dam, to make it more accessible and safer for recreationists, and improve an existing trailered boat launch ramp located on the left bank of the impoundment upstream of the powerhouse.
- Modify the existing project boundary to define the boundary around the project impoundment as the contour elevation 535.5 ft msl at the flashboard crest, and to encompass all recreational access facilities.

#### 1.4 Average Annual Energy Production

The estimated average annual generation (2011–2015) at the Project is 8,832,296 kilowatt-hours (kWh/year).

#### 1.5 Estimated Average Head

The estimated average gross head at the Project is approximately 18 ft, which includes 5 ft of flashboards.

#### 1.6 Impoundment

The impoundment has a surface area of 35 acres at the normal pond elevation 535.5 ft msl at the flashboard crest. The impoundment has an estimated gross storage capacity of 140 acre-feet. As a run-of-river facility the project has no net usable storage capacity.

#### 1.7 Flow Data

The Project has a minimum and maximum hydraulic capacities of 600 and 3,100 cfs, respectively. The Project has a drainage area of about 1,540 square miles. The United States Geological Survey (USGS) operates a gaging station on the Broad River (USGS Gage No. 02153200, Broad River near Blacksburg, SC), which has a drainage area of 1,290 square miles and is located 5.3 river miles upstream from the Project dam. The gage has a period of record from October 1997 to present. Table 1.7-1 below provides the average, maximum, and minimum annual and monthly flows of the Broad River at the Project from January 1998 through December 2017. From January 1998 through December 2017 the instantaneous maximum and minimum flows at the Project were 45,245 and 23 cfs, respectively. At the Project the average flow is 1,962 cfs. The intervening drainage between the USGS gage and the Project dam is 250 square miles and represents about 16 percent of the total drainage area upstream of the Project dam. Therefore, the USGS gage data were prorated by 1.19 to account for the intervening drainage.

**Table 1.7-1. Average, Maximum, and Minimum Flows estimated at the Project based on USGS Gage No. 02153200, Broad River near Blacksburg, SC from January 1998 through December 2017.**

Month	Average (cfs)	Maximum (cfs)	Minimum (cfs)
January	2,568	39,992	161
February	2,383	34,143	72
March	2,544	25,547	41

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

Month	Average (cfs)	Maximum (cfs)	Minimum (cfs)
April	2,585	25,667	74
May	2,146	45,245	80
June	1,655	20,295	153
July	1,609	23,518	25
August	1,305	19,936	31
September	1,294	24,234	23
October	1,300	13,251	25
November	1,755	30,322	38
December	2,385	27,219	98
Annual	1,962	45,245	23

Source: USGS (2018)

## 1.8 Project Facilities

The Cherokee Falls Hydroelectric Project facilities consists of a dam, intake, powerhouse, tailrace, transmission line and appurtenances. Figure 1.8-1 shows the location of the various project facilities.

### 1.8.1 Dam

The Project dam is an existing 1,819 foot long granite masonry dam. The dam includes a total of 1,017 feet of spillway topped by 5-feet of wooden flashboards, a 35-foot long non-overflow floodgate structure, and a non-overflow section adjacent to the power intake that include two trash sluice gates. Three different flashboard designs are deployed on the spillway crest. Starting from the intake at the left abutment, there are: two sections totaling 410 feet in length of vertically hinged flashboards under a catwalk structure, which can be automatically or manually tripped; 99 feet of strut-supported flashboards which can be manually tripped by cable and winch; and 1,192 feet of wooden flashboards supported by steel pins.

### 1.8.2 Intake Facility

The intake facility at the Project consists of a trashrack and trashrack drag rake. The trashracks at the Project are 32.8 feet wide by 34.1 feet high with 3.5-inches of clear spacing. The trashrack drag rake is about 40 feet wide and is used to clear debris in front of the intake.

### 1.8.3 Powerhouse

The 130-foot-long by 40 foot wide powerhouse has a concrete foundation and a prefabricated superstructure. The powerhouse contains one turbine-generator unit.

### 1.8.4 Tailrace

A concrete tailrace wall approximately 40 feet long forms the boundary for a tailrace channel along the river left bank. Generation flows enter into the Broad River about 150 feet downstream of the intake and dam.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

### 1.8.5 Transmission Line

Electricity generated by the Project is transmitted by 93 feet of transmission line to three 500-kilovolt-ampere (kVA) transformers which increase the voltage from 2,300 volts to 12,470 volts, before interconnecting with the electric grid about 200 feet north of the Project along State Road S-11-30.

### 1.9 Estimated Project Cost

[To be provided in the Final License Application.]

### 1.10 Estimated Project Operations and Maintenance Cost of each Proposed Environmental Measure

The estimated costs of environmental measures for the Project are provided in Table 1.10-1 in 2018 dollars.

**Table 1.10-1. Estimated Costs of Environmental Measures**

Proposed Measure	Capital Cost (\$)	Annual Operations and Maintenance Cost (\$)
Sediment Management Plan	<i>[to be provided in the Final License Application]</i>	
Recreation Facilities Management Plan		
Recreation Facility Improvements		

## 2 PROJECT PURPOSE

Power generated by the Project is sold into the power grid. The Project provides valuable socioeconomic benefits for the region, and the estimated 8,832,296 kWh of average annual renewable power generation from the Project helps offset reliance on non-renewable fossil fuel sources.

## 3 PROJECT LICENSING COSTS

The estimated cost to develop the license application is \$[*to be provided in FLA*] in 2018 dollars.

## 4 PEAK AND OFF-PEAK POWER VALUES

Not applicable; the Project is operated in a modified run-of-river mode.

## 5 CHANGE IN PROJECT GENERATION

Cherokee is not proposing a change in Project generation or operation; therefore, Cherokee does not expect an increase or decrease in Project generation or value of Project power.

## 6 PROJECT VALUE

The Project net book value is [to be provided in FLA] in 2018 dollars.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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**7 ANNUAL OPERATIONS AND MAINTENANCE COSTS**

In 2018 dollars, the average annual operations and maintenance costs are estimated to be \$[*to be provided in the FLA*], and other expenses including insurance, taxes, and administrative costs average \$[*to be provided in the FLA*] annually. Therefore, the total average annual operation and maintenance cost is \$[*to be provided in the FLA*].

**8 SINGLE-LINE ELECTRICAL DIAGRAM**

A detailed single-line electrical diagram is included as Figure 8-1 to this Exhibit. However, this drawing is considered Critical Energy Infrastructure Information pursuant to the Commission's regulations and will be removed from the public and privileged copies of the application.

**9 SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT**

Cherokee has safely managed, operated, and maintained the Project throughout the existing license term. These same practices will be continued under the new license, subject to any new terms and conditions contained therein.



Cherokee Falls Hydroelectric Project (No. 2880)  
EXHIBIT A-PROJECT DESCRIPTION

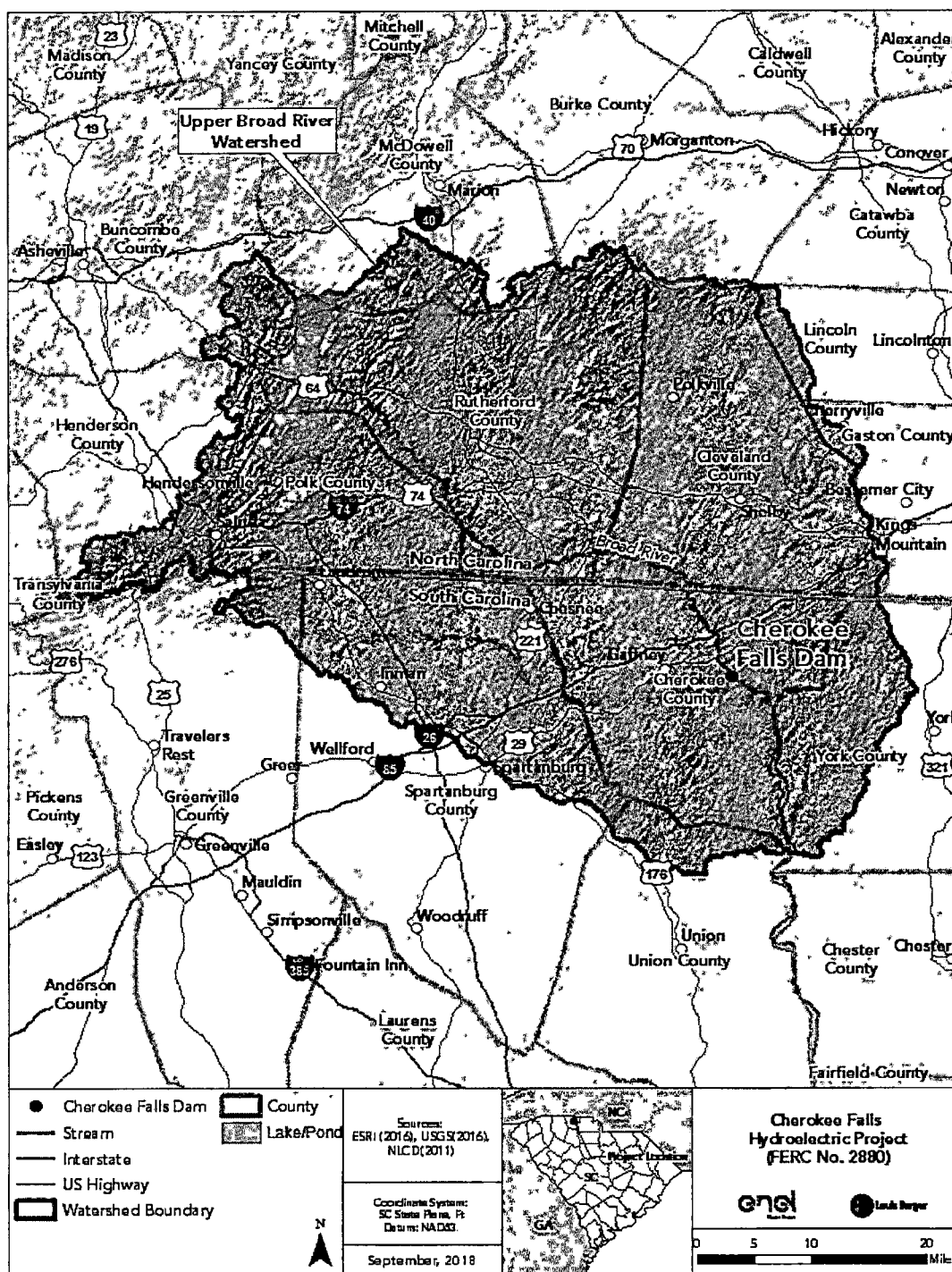


Figure 1-1. Cherokee Falls Hydroelectric Project general location.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

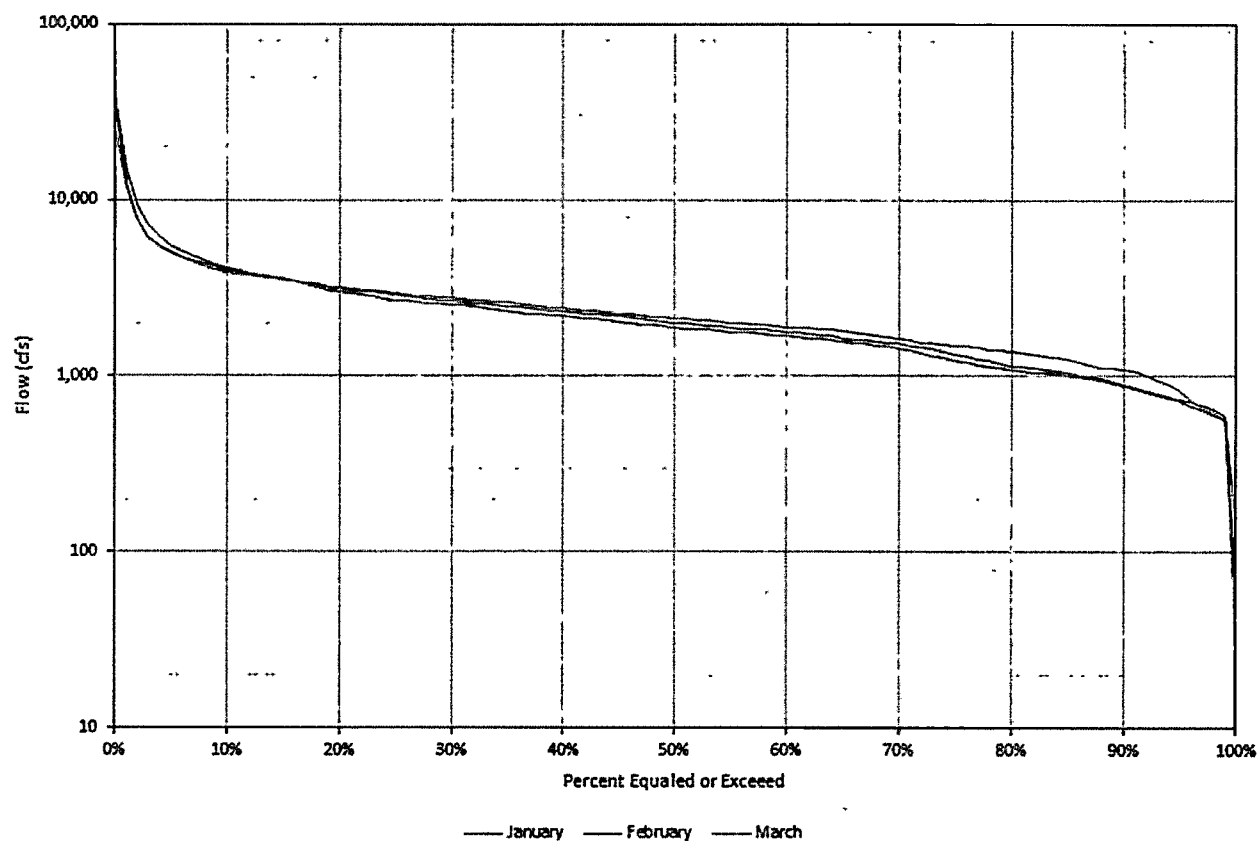


Figure 1.7-1. Broad River at the Project Flow Duration Curve for January, February, and March (1998–2017).

Cherokee Falls Hydroelectric Project (No. 2880)  
EXHIBIT A-PROJECT DESCRIPTION

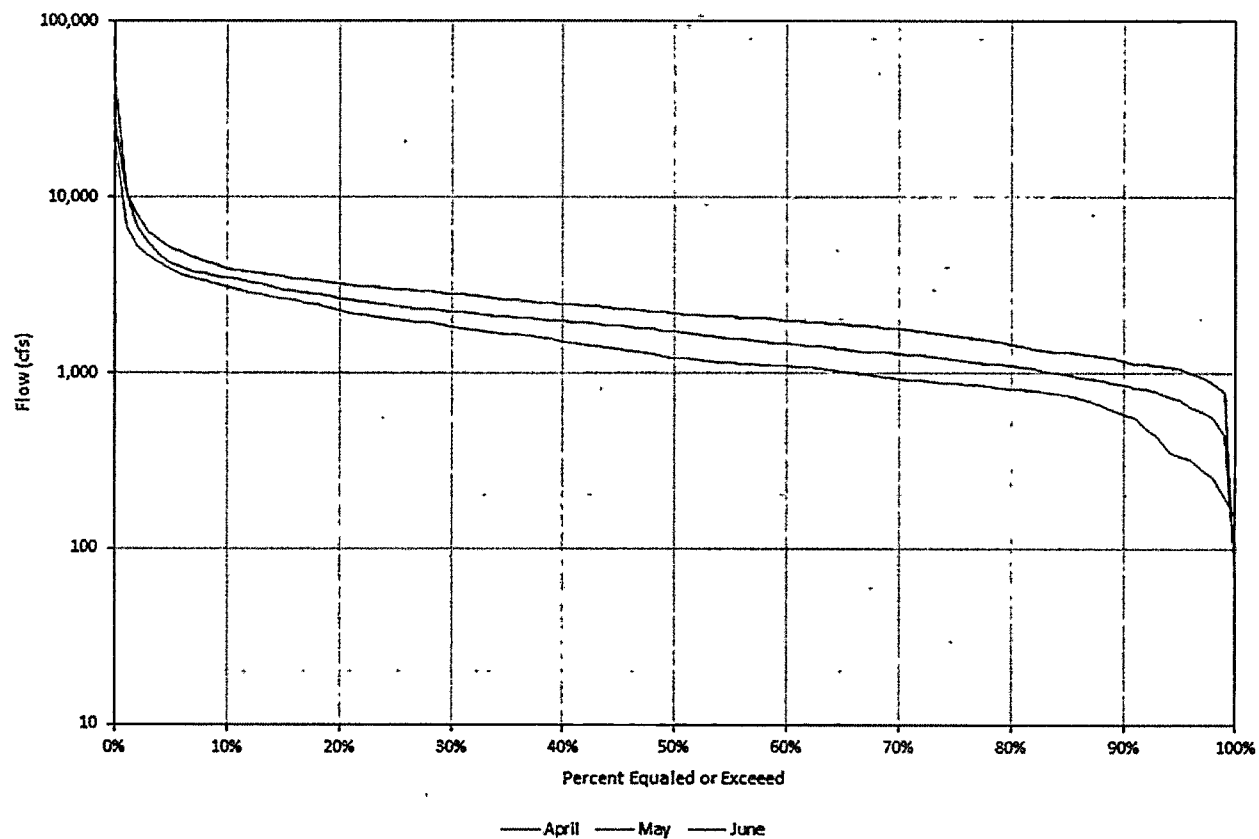
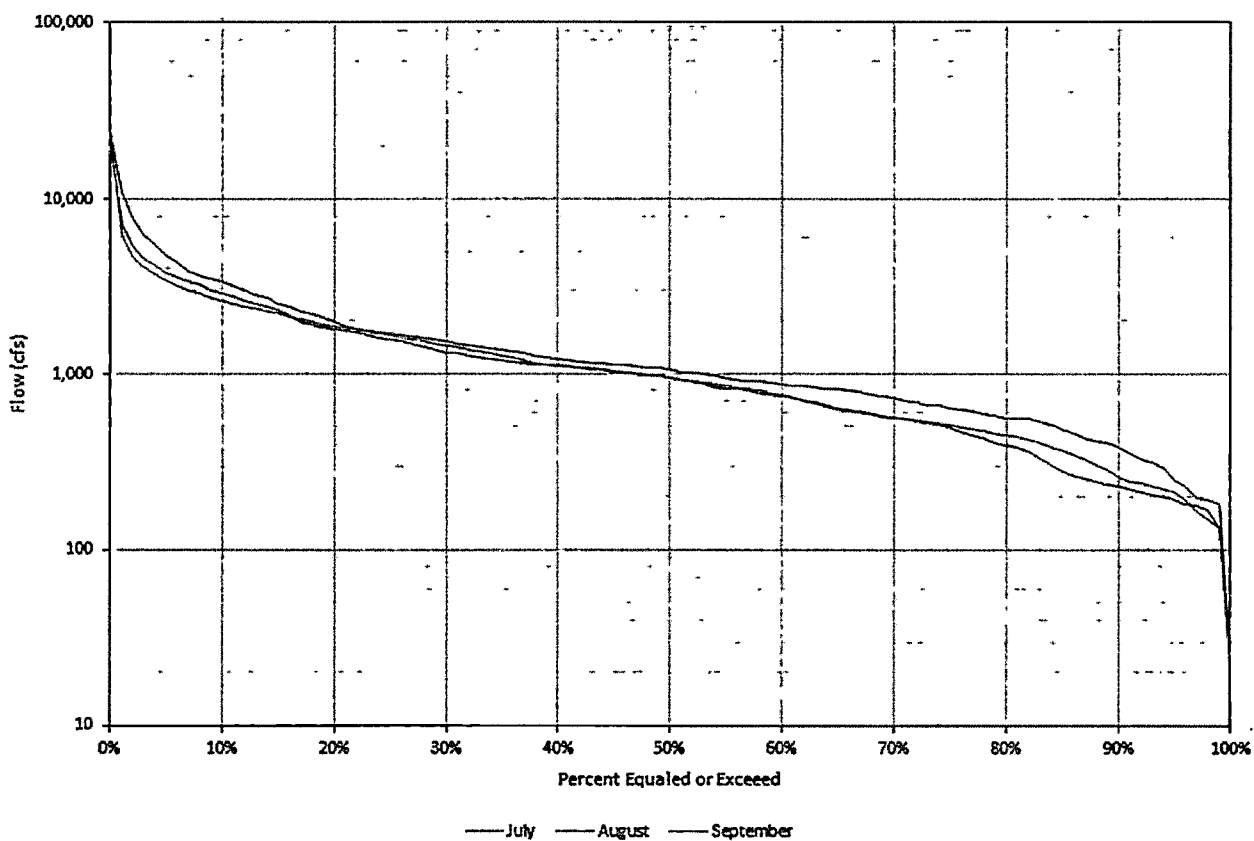


Figure 1.7-2. Broad River at the Project Flow Duration Curve for April, May, and June (1998-2017).

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION



**Figure 1.7-3. Broad River at the Project Flow Duration Curve for July, August, and September (1998–2017).**

Cherokee Falls Hydroelectric Project (No. 2880)  
EXHIBIT A-PROJECT DESCRIPTION

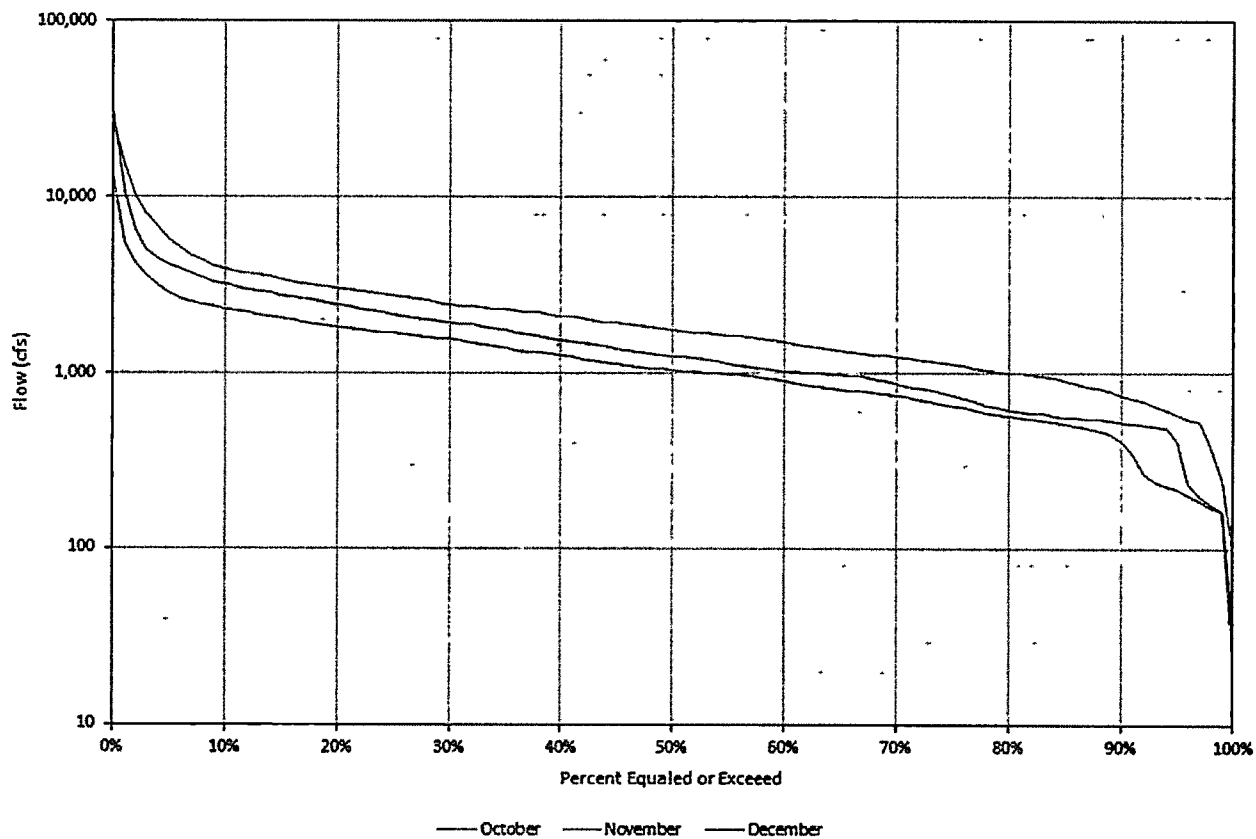


Figure 1.7-4. Broad River at the Project Flow Duration Curve for October, November, and December (1998-2017).

Cherokee Falls Hydroelectric Project (No. 2880)  
EXHIBIT A-PROJECT DESCRIPTION

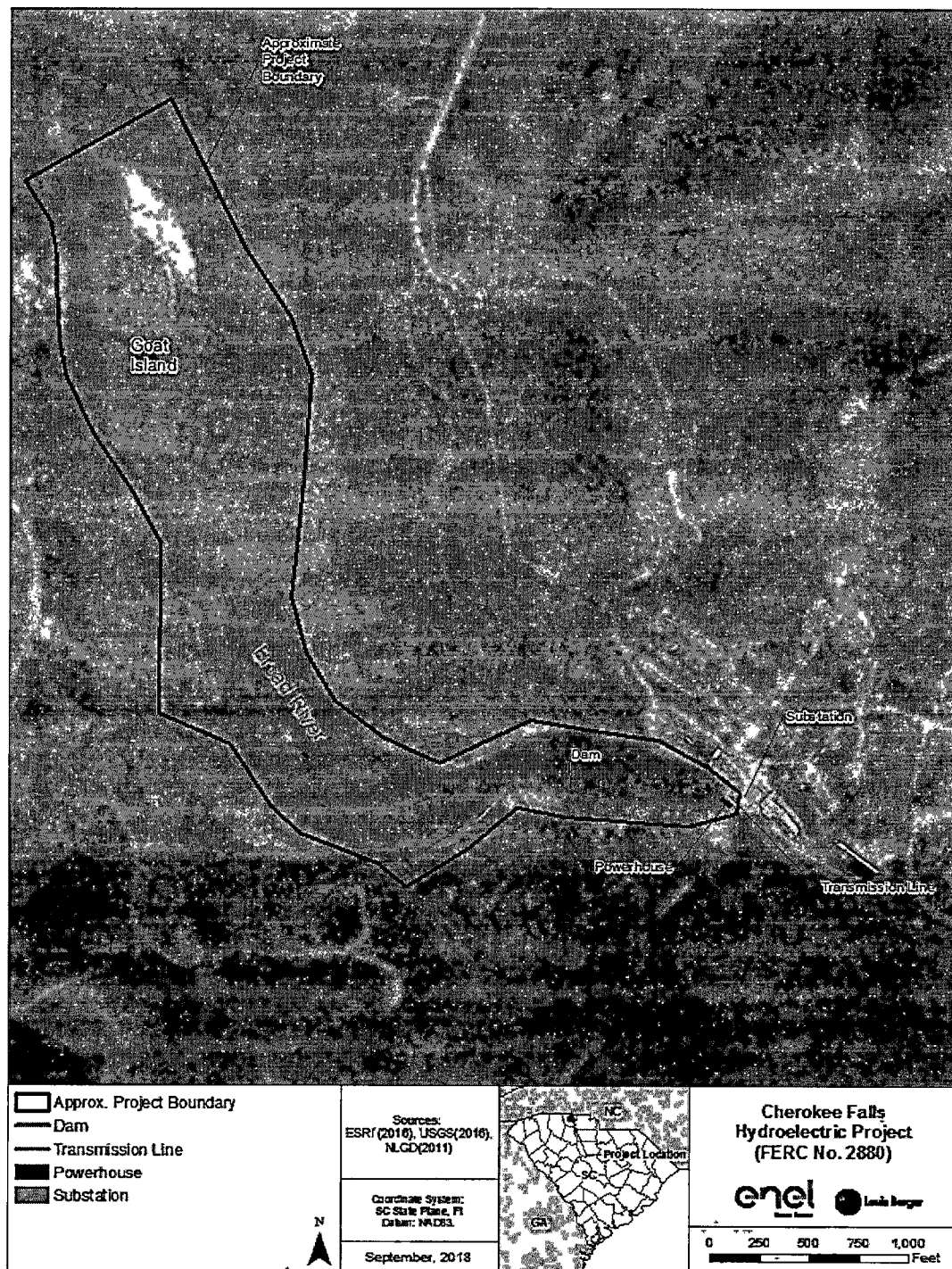


Figure 1.8-1. Cherokee Falls Hydroelectric Project facilities.

*Cherokee Falls Hydroelectric Project (No. 2880)*  
EXHIBIT A-PROJECT DESCRIPTION

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(These drawings are considered Critical Energy Infrastructure Information [CEII] and have been removed from this document).

**Figure 8-1. Single Line Diagram.**